DOE/EH – 0645

Protection Technology Hanford

Report from the DOE Voluntary Protection Program Onsite Review, August 15-18, 2000

U.S. Department of Energy
Office of Environment, Safety and Health
Office of Safety and Health
Office of Regulatory Liaison

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Abbreviations and Acronyms

AJHA	Automated Job Hazard Analyses
BLS	Bureau of Labor Statistics, U.S. Department of Labor
CIH	Certified Industrial Hygienist
CSP	Certified Safety Professional
DOE	Department of Energy
DOE-VPP	Department of Energy Voluntary Protection Program
EH	Office of Environment, Safety and Health
ES&H	Environment, Safety and Health
FH	Fluor Hanford
HAMTC	Hanford Atomic Metal Trades Council
HEHF	Hanford Environment Health Foundation
HGET	Hanford General Employee Training
HGU	Hanford Guards Union
HQ	Headquarters
LOTO	Lockout/Tagout
LWDI	Lost Workday Incidence
OSHA	Occupational Safety and Health Administration
PHMC	Project Management Hanford Contract
PPE	Personal Protective Equipment
PTA	Patrol Training Academy
PTH	Protection Technology Hanford
PM	Preventative Maintenance

RII Recordable Injury Incidence

RL Richland Operations Office (DOE)

RPRA Respiratory Protection Program Administrator

SAS Safeguards and Security

SIC Standard Industrial Classification

S&H Safety and Health

TMX Training Matrix

TWA Time Weighted Average

VPP Voluntary Protection Program

Executive Summary

The Department of Energy Voluntary Protection Program (DOE-VPP) onsite review of Protection Technology Hanford (PTH), Richland, Washington, VPP application was conducted during the week of August 15-18, 2000. A preliminary DOE-VPP onsite evaluation of PTH was previously conducted in July 1999. During the preliminary review, some recommendations were offered to PTH to enhance its safety and health programs. During the current onsite review, the team focused on the recommendations resulting from the preliminary review. This review also included some site personnel interviews, and the review of updated health and safety program documentation.

PTH is the safeguards and security contractor at Hanford that took over this function in March 1999 from B&W Protec, who had also worked towards inclusion in the DOE-VPP for the last few years. The mission of PTH at the Hanford site is to maintain a standardized program for all Project Hanford Management Contractors (PHMC) relating to safeguards and security (SAS) functions and to physically protect special nuclear material, classified material, government property, and the personnel located within the confines of the Hanford site.

Management Leadership

The DOE-VPP onsite review team observed that management was deeply committed to ensuring a strong safety and health (S&H) culture exists and is communicated from all levels of management. The team noted several management decisions, both past and current, that demonstrated a very strong commitment to employee S&H. There is a commitment from all levels of company personnel, from the patrol level to top management, to make the PTH goal of "Zero Accidents," a goal for all company personnel. PTH has established such a strong safety culture that both management and employees share the belief that all employees of PTH are both responsible and accountable for S&H in the workplace. All managers, supervisors and employees are evaluated for their contribution towards safety, as well as their safety performance, and are held accountable for safety. Top-level management at PTH is visible and actively participates in the S&H program. The only identified area for improvement relates to the lack of detailed documentation and enhancements usually compiled as part of annual program evaluations. The onsite review team recommends that PTH be encouraged to develop a more formalized management system that provides for documenting annual S&H program evaluations that are conducted to assess the effectiveness of each element and subelement of DOE-VPP. Other than this weakness, the team concluded the applicant meets the expectations of this VPP tenet.

Employee Involvement

The DOE-VPP team found employees at PTH to be involved in several ways in promoting S&H in the workplace. Employee involvement not only occurs through their participation in the PTH Safety Council and Patrol Safety Council meetings that are held monthly and bimonthly, respectively, but also through their walkaround safety inspections of the facilities. PTH employees not only feel responsible for their safety but also for their peers. The team found during the interviews that they always spoke in terms "we" and "our" efforts when referring to their peers and management. A healthy sense of ownership and pride in S&H in the employees exists at this site. The team observed that PTH employees are truly involved in the S&H program and have a strong safety culture. They are not only involved in hazard recognition, job hazard analyses, but also in hazard resolution. The onsite team was of a consensus opinion that PTH clearly exceeds the expectations of this principal DOE-VPP tenet.

Worksite Analyses

Various and numerous forms of self-inspections are conducted at PTH. Members of the Safeguards and Security Council perform monthly inspections conducting housekeeping inspections. About half of the members on the safety council are hourly workers who are also engaged in the self-inspection process. Job hazard analysis at PTH is a two-step process. Prior to every exercise, a preliminary job hazard analysis checklist, consisting of a number of potential hazards which an employee may be exposed to, is used to aid in identifying hazards in that area, such as tripping, radiation, falling objects, etc. The team noted several job safety analyses (JSAs) posted at or near the workstations in the armorer's shop and the adjacent cleaning trailer. Other JSAs are developed by PTH for each new work package or activity. In May of 2000, PTH began using the Hanford Automated Job Hazard (AJHA) process, which is an interactive software program that guides the user in identifying potential hazards. Employees at PTH are not only encouraged to report any unsafe conditions, but are expected to report and correct the situations, if safe to do so. The accident investigation process at PTH involves analysis to determine the root cause as well as causal factors. The review team observed that the accident investigation is complete and includes the identification of root causes as deemed appropriate by the supervisor and the employee. The team also observed that corrective actions are applied by PTH in a timely manner.

With respect to the documentation of comprehensive surveys, the team did not observe the existence of fully documented information pertaining to a baseline hazard assessment report or database information. Although this represents an observed weakness, it relates mostly to the retrievability of hazards assessment data, which the team believes is an important attribute for program continuity. The review team recommends that PTH should assemble and document its baseline hazard information and surveys. Additionally

important would be the documentation of hazard assessment certifications and a schedule for periodic program reviews. With this minor exception, the team consensus was the applicant readily meets the expectations of this tenet.

Hazard Prevention and Control

PTH employs a standard hierarchy of controls to ensure the prevention and mitigation of hazards in the work environment. Approaches include engineering controls, administrative controls, and personal protective equipment (PPE). As a part of hazard prevention efforts, PTH safety committee employees are often very involved in the positive safety reinforcement program and consistently provide personal reinforcement and motivation for safety due to their exemplary individual commitment to safety. The program utilizes monthly gift certificate awards to formally recognize specific individuals who go "above and beyond" their normal daily responsibilities to promote safety. The program encourages employees to intervene directly with co-workers to avoid unsafe acts and to correct potential safety hazards, both at work and away.

The PTH preventive maintenance program is keyed to the periodic inspection, servicing, refurbishing, and testing of individual security equipment items or systems. PTH has developed it's own tracking system, "Safeguards and Security Safety Issues Database." This database is very user-friendly and is being made available on computer network for access to all PTH employees. The present system tracks concerns, corrective actions from various assessments, and committees. The team consensus was the applicant had demonstrated it exceeds the expectation of the DOE-VPP in this tenet.

Safety and Health Training

The team noted from employee interviews and document reviews that employees at all levels knew how to identify and protect themselves and others from hazards associated with their jobs. As was noted on several occasions during the interviews, the training provided to PTH employees has made them more conscious of health and safety issues not only in their work environment but also in their everyday lives away from the Hanford Site. Site S&H awareness topics that are also applicable to offsite safety are frequently addressed in regularly scheduled safety and toolbox meetings.

Management encourages employees to freely participate in their development programs, by way of suggestions and recommendations of how to improve and enhance their own training. Top management clearly supports the S&H training programs as evidenced by employee interviews, funding levels, documentation reviews, accreditations and nationally recognized awards from various security-related competitions.

Interviews with personnel did identify one small improvement need for training wherein those who conduct safety and health inspections and self-assessments are not always afforded in-depth hazard recognition training. Addition of such training for these personnel would enhance the overall training program and the site's overall assessment process. The team consensus was that the applicant exceeds the expectations of this specific DOE-VPP tenet.

Recommendations

The team was able to reach a consensus opinion that the applicant clearly exceeded the criteria generally applied for acceptance in the DOE-VPP. The team, during the course of its review, did identify two specific program improvement objectives that apply to the tenets of management leadership and worksite analysis. These recommendations, if accepted, were considered to be short-term weaknesses that could be accommodated by the applicant in a relatively short time.

Recommended Goals for Improvement:

1. Protection Technology Hanford should develop and implement a management system that ensures full documentation of its annual S&H program evaluations. The annual evaluation should address each element of the DOE-VPP.

2. Protection Technology Hanford should compile and maintain full documentation for its baseline hazards assessments and survey programs. Additionally, Protection Technology Hanford should enhance its existing hazards recognition training for assessment personnel.

I. Introduction

The DOE-VPP onsite review of Protection Technology Hanford (PTH), Richland, Washington, was conducted during the week of August 15-18, 2000. PTH was evaluated against the program requirements contained in U.S. Department of Energy Voluntary Protection Program, Part I: Program Elements to Determine its Success in Implementing the Five Tenets of DOE-VPP. The team consisted of a diverse cross section of individuals from the DOE Headquarters office, Richland Operations Office, and an individual from the Occupational Safety and Health Administration (observer). See Appendix on the team roster. A preliminary DOE-VPP onsite evaluation of PTH was conducted in July 1999. During the preliminary review, that team made several recommendations to PTH to further enhance its S&H programs. During the review, the onsite review team focused on the items of recommendations from the preliminary review, conducted some formal interviews, and reviewed documentation.

PTH is the safeguards and security contractor at Hanford that took over this function in March 1999 from B&W Protec who had also worked toward inclusion in the DOE-VPP for the last few years. B&W Protec had submitted an application to the Headquarters DOE-VPP Office and had received a VPP review by the Richland Operations Office (RL) in 1999. With that history, PTH management decided to continue pursuit of DOE-VPP status and requested a review from the DOE Headquarters.

The mission of PTH at the Hanford site is to maintain a standardized program for all Project Hanford Management Contract (PHMC) safeguards and security (SAS) functions. Their primary mission is to physically protect special nuclear material, classified matter, government property, and personnel located within the confines of the Hanford site.

II. Program Status

The onsite review team conducted a review of OSHA 200 logs for the current year as well as the preceding 3 calendar years. To calculate the lost workday incidence (LWDI) and recordable injury incidence (RII) rates, the team used two standard formulas:

$$\text{RII rate} = \frac{\text{No. of Recordable incidents [Col.(1) + Col.(2) + Col.(6)] x 200,000}}{\text{No. of employee hours worked}}$$

$$\text{and LWDI rate} = \frac{\text{No. of LWD cases [Col.(2)] x 200,000}}{\text{No. of employee hours worked}}$$

The following table provides the data and rates for the preceding 3 calendar years, together with the 3-year average. It also provides the DOE average for security contractors.

Injury and Illness Rates at PTH

Calendar Year	LWD Injury Cases	RII Cases	Employee-Hours Worked	LWDI Rate	RII Rate
1997	3	9	700,623	0.9	2.6
1998	0	5	671,899	0.0	1.5
1999	4	12	567,527	0.9	4.2
3-Year Average Rates	7	26	1,940,049	0.7	2.7
DOE Average for Security Contractors	123	253	11,630,254	2.1	4.4

Since the injury/illness data published by the Bureau of Labor Statistics (BLS) for security contractors includes security forces that do not perform physical exercise activities similar to DOE security forces, a comparison of rates with all DOE security contractors has been made to determine PTH's S&H performance with respect to the entire DOE security forces. The 3-year average rate for both RII and LWDI is substantially below the DOE average for security contractors. The information entered on the OSHA 200 log supports the information submitted in the application and contained in the supporting injury/illness documents. Fluor Hanford, Management and Operating contractor at Hanford, maintains the injury/illness information on a computer database system that is capable of producing OSHA 200 log information. The individual who maintains the log is knowledgeable on the OSHA 200 log requirements. The Safety Department generates an injury/illness trending report on a monthly basis, which is distributed to the managers as a tool for use in their efforts to reduce injury rates. The team believes that PTH adequately meets the expectations of entry into the DOE-VPP in this regard.

III. Management Leadership

A. Management Commitment (Policy and Goals)

The DOE-VPP onsite review team found strong evidence of S&H commitment from all levels of management. The team noted several management decisions, both past and current, that demonstrated commitment to employee S&H. For example, PTH terminated a multi-million dollar contract with a retail distributor due to that company's unwillingness to correct identified hazardous conditions. The onsite review team was quite impressed with a statement made by an employee that was in favor of the General Manager's commitment to S&H of employees. The statement pertained to the way the manager handled a medical reimbursement issue, which was not initially in favor of the employee. Almost all employees echoed the same feeling that the PTH management is strongly committed towards safety. Another example in demonstrating commitment to safety is that the PTH management has also been proactively redesigning workstations at its office facilities at Hanford.

There is a commitment from all levels of company personnel, from the patrol level to top management, to make the PTH goal of "Zero Accidents," a goal for all company personnel. The "Zero Accidents" goal was clearly communicated to employees at all levels of the company and each employee interviewed could describe his/her involvement and understanding of the goal. PTH employees are aware of the company's safety policy and during the interviews, they all stated that S&H at PTH receives equal or greater importance with all other organizational values.

B. Written Program

All critical elements of a written S&H program were verified to be included in PTH's program. PTH procedures are centrally located on a shared computer drive that employees can access by computer. Environment, safety and health (ES&H) procedure SAS-5874 clearly delineates S&H roles and responsibilities for all PTH employees. Additionally, employees have access to the computerized procedures. According to employees interviewed, the program was accessible and adequate for the hazards contained in the various areas of PTH activities.

C. Responsibility

PTH has established such a strong safety culture that both management and employees share the belief that all employees of PTH are both responsible and accountable for S&H in the workplace. The SAS-5874 clearly outlines that S&H is a line responsibility which states that - "All PTH employees are responsible for safety." Interviewed managers were very much aware that safety is their responsibility, and the ES&H department is consulted for their assistance in resolving safety and technical issues. Managers meet monthly to discuss their safety performance. During interviews and the observation of

work, it was clearly evident to the team that ownership of the program was shared and the regards of successes or the consequences of failures were shared by all in the company.

D. Authority and Resources

PTH managers have sufficient resources to carry out their S&H responsibilities. Many employees interviewed by the team indicated that safety is a top priority at PTH and in some cases, individuals expressed that management was too conservative when it came to safety. Time allotted for safety councils, resources provided to participate in Hanford sitewide expos and proactively providing ergonomically designed chairs for employees, and other VPP-related activities are few examples of management commitment to provide resources. Employee interviews confirmed that resources were sufficient to carry out their S&H responsibilities. All employees interviewed indicated that they have stop work authority and relayed examples of when they actually stopped work when they felt there was a safety hazard. The other contractors at the Hanford site provide resources to PTH as a part of Project Management Hanford Contract (PHMC) or as part of Hanford sitewide in general. For example, Hanford Environment Health Foundation (HEHF) provides general and occupational medical services, and DynCorp provides vehicle maintenance, facility maintenance and Industrial Hygiene services.

E. Line Accountability

All managers, supervisors and employees are evaluated for their contribution toward safety, as well as their safety performance, and are held accountable for safety. Managers are responsible for establishing employee performance expectations, conducting periodic evaluations of progress on achieving expectations, and conducting annual evaluations. The DOE-VPP team verified through employee interviews that managers communicate S&H objectives and expect the objectives to become an integral part of their daily activities. Managers meet with employees periodically throughout the year to provide feedback. The performance appraisal forms used at PTH are designed to include safety accomplishments. It also lists the specific safety outcomes and objectives expected for the year. Any safety improvements needed are also included as a part of the performance appraisal system. Sample reviews of the performance appraisals by the DOE-VPP onsite review team confirmed that PTH holds employees for their safety performance including managers and supervisors. Fundamental and specific goals are set based on individual and group requirements. The performance appraisal system used at PTH encourages employees to provide their best efforts in achieving goals. The expectations are formulated each year. The performance period is for each fiscal year. The DOE-VPP found PTH to hold managers, supervisors and employees accountable for safety.

F. Management Visibility

Top-level management at PTH is visible and actively participates in S&H program. The General Manager participates and particularly pays attention to safety in the Force-on-Force exercises that are routinely conducted. The General Manager also chairs the PTH safety council that meets monthly to discuss safety-related issues. The manager and his

staff hold an all-hands meeting every 2 months. A newsletter, "Communicator," that is published quarterly, is also another vehicle used by the management in communicating safety-related issues to PTH employees. Managers are held accountable for their S&H responsibilities and maintain a policy of accessibility with regards to S&H issues that arise in the workplace. PTH has established an "open door" policy to ensure that any employee at any time can express a S&H concern to any level of management. The team observed this policy through formal and informal interviews and noted that most employees did not feel the need to raise concerns above their first-tier supervisor because any concerns raised were resolved almost immediately.

G. Site Orientation

The basic site orientation for employees are achieved through the completion of the Hanford General Employee Training (HGET). HGET is an interactive computer-based course that covers a wide variety of areas including occupational S&H topics, computer security, and industrial safety. Employees have to take tests at the end of each session and be able to pass a course before he or she can proceed to a next session. Only upon completion of all the required topics, the employees will be given a HGET certification that is valid for 1 year. Each employee is required to take HGET yearly. In addition to HGET, employees receive facility-specific briefings based on daily work assignments. Training records and interviews showed that this program met DOE-VPP expectations.

H. Subcontractor Programs

PTH does not have resident contractors onsite. However, the PHMC procedure HNF-PRO-078 outlines requirements for vendor and subcontractor selection, if needed. The subcontractor's safety program and past performance in the area of S&H are qualifying factors in the selection process. The procedures provide for audits of the subcontractor's or vendor's facilities. All subcontractor employees have to undergo a safety orientation program, which indoctrinates them to the site's S&H policy and hazards.

I. Safety and Health Program Evaluation

The team observed that routine evaluations of PTH's S&H program were being conducted with participation by both management and employees. PTH uses SAS Management Assessment procedures, which require them to perform and document annual reviews of the ES&H program. Though PTH has done self-assessments for continuous improvements in the S&H program, the review team observed that the PTH reviews did not always formally document the criteria suggested for DOE-VPP applicants to perform annual S&H program evaluations. Although this represents a minor aspect of the PTH overall management leadership tenet, the consensus of the team was that it be presented as a short-term recommendation for program enhancement. It is the review team's recommendation that PTH develop a system that provides for documenting annual S&H program evaluations that are conducted to assess the effectiveness of each element and sub-element as described in section II.E of DOE/EH-0433, *U.S. Department of Energy Voluntary Protection Program Part I: Program*

Elements. The annual evaluations should result in a written, narrative report with written recommendations for improvement and documented timely follow-up. Other than this one minor recommendation, the team consensus was the applicant meets this VPP tenet.

IV. EMPLOYEE INVOLVEMENT

The DOE-VPP found employees at PTH to be involved in several ways in promoting S&H in the workplace. Employee involvement not only occurs through their participation in the PTH Safety Council and Patrol Safety Council meetings that are held monthly and bimonthly, respectively, but also through their walkaround safety inspections of the facilities. The PTH safety council is made up of both management and hourly workers. Numerous examples of employee involvement in relation to the PTH Safety Council were discussed during the interviews with employees. Almost everyone stated that PTH Safety Council plays a very active role to positively drive and maintain safe workplace conditions and enhance communications for all employees at PTH. This safety council tracks and trends accidents/injuries and safety issues on a monthly basis. This safety council has been recognized by other contractor organizations at Hanford as a model of how such an organization should be structured and deployed.

Every crew has at least one Safety Steward who is trained to be alert to and, if possible, to do so safely, mitigate conditions in the work place that may compromise the safety of the employees. The Safety Stewards are responsible for working with their fellow employees and management in finding solutions to safety concerns, which the employees themselves were unable to resolve. They also represent their crew on the Safety Councils and the VPP Committee.

Employees indicated that they are always able to have their concerns heard in a timely manner, felt strongly about using their stop work authority, and that they are not afraid of any reprisals for doing so.

PTH employees not only feel responsible for their safety and but also for their peers. The team found during the interviews that they always spoke in terms of “we” and “our” efforts when referring to their peers and management. The team also noted a healthy sense of ownership and pride in S&H in the employees. The employees also felt that ES&H has improved significantly during the past 5 years. Several stated that: “We have been at Hanford for the past 20 years but have seen a significant improvement in the safety culture particularly in the last 5 years.” Some other examples of employee statements are given below:

“*At PTH, we (employees and management) believe that safety is more important than our work product*."

“Even though our work is inherently dangerous, we believe that there are sufficient safeguards to protect the workers.”

“We spend 1/3 of our time with our families, 1/3 of our time sleeping and 1/3 of our time working together. We are Family.”

The DOE-VPP team strongly believes that PTH employees are truly involved in the S&H program and have a strong safety culture. They are not only involved in hazard recognition, job hazard analyses, but also in hazard resolution. Employees gave several examples of their involvement in hazards resolution and safety awards program.

The team was able to reach a consensus that the applicant readily exceeded the expectations of DOE-VPP in this tenet.

V. Worksite Analysis

A. Pre-Use Analyses

PTH uses Job Hazard Analyses checklist as a means to identify preliminary hazards for each new training program or course of fire at the Patrol Training Academy (PTA). In addition, Employee Job Task Analyses provides information on the jobs or tasks employees can perform or are allowed to perform based on their health evaluations. Every mock exercise undergoes extensive hazard analyses prior to the actual exercise. PTH has a dedicated armorer who checks the handguns prior to their use.

All employees are required to check for safety features of the handguns prior to their practice rounds at PTA. The jobs requiring maintenance at some parts of the Hanford site by the individuals from the maintenance group require thorough pre-job analyses. The maintenance personnel work with the engineers-in-charge of the maintenance project in completing the job hazard analyses checklist.

Interviewed employees confirmed that they sit down with the engineers and go over all the hazards associated with the tasks and take appropriate measures prior to starting their jobs. One employee cited a recent event as " a perfect example," where they identified a piece of equipment to be worked on was still energized and through the task analyses process avoided a hazard. PTH management supports the idea of the pre-use analyses heavily.

Procurement of any hazardous material is reviewed for environmental compliance and material safety data sheet documentation is ordered and utilized to identify potential hazards of materials. For example, a PTH instructor stated that they were looking at other options in substituting lead bullets with non-toxic bullets that could be easily fragmented. Based on the information gathered from the interviews and document reviews, the onsite review team found PTH to have a comprehensive, pre-use/pre-startup analyses program.

B. Comprehensive Surveys

At PTH, lead and noise exposure monitoring is conducted by an industrial hygienist under a supervision of a Certified Industrial Hygienist from Dyncorp. The DOE-VPP onsite review team reviewed a copy of lead, noise and naptha exposure survey conducted in April 2000 at the PTA live range and adjacent weapons cleaning trailer. Only limited sampling data was available on lead exposure from the applicant. A survey completed in April of 2000 indicated time weighted lead exposures between 21 and 29 micrograms per cubic meter. These air monitoring results were sufficiently close to the OSHA Action Level of 30 micrograms per cubic meter and followup review of blood level surveillance is encouraged.

Additionally, the team did not identify or review substantial information pertaining to an overall baseline hazard assessment report or database information.

The PTH staff relies on the PHMC designated Respiratory Protection Program Administrator (RPRA) to provide technical support in the administration of this program. Based on the information gathered, the review team consensus was that as program enhancements, PTH should develop a documented assessment plan and schedule for required programmatic reviews of programs such as respiratory protection program, lockout and tagout, bloodborne pathogens and other S&H programs (lead and noise, for example). The team recommends the applicant be encouraged to implement program enhancements such as: develop and assemble baseline hazard information and baseline surveys; complete hazard assessment certifications; and PTH develop an assessment plan and schedule for periodic programmatic reviews of programs, including respiratory protection, Lockout and Tagout, bloodborne pathogens and other programs such as lead and noise.

C. Self-Inspections

Various forms of self-inspections are conducted at PTH. The procedure for conducting self-inspections, HNF-PRO-076, outlines the requirement for conducting frequent and periodic self-inspections. It also outlines manager and supervisor responsibilities in conducting the self-inspections.

The procedure for conducting self-inspections HNF-PRO-076 outlines the requirement for conducting frequent and periodic self-inspections. It also outlines managers' and supervisors' responsibilities in conducting the self-inspections. This procedure applies to all shops, offices and facilities. Members of the Safeguards and Security Council perform monthly inspections conducting housekeeping inspections. About half of the members on the safety council are hourly workers who are also engaged in the self-inspection process. Only one member of the safety council performs, whether hourly or management member. The facility areas of the safety and housekeeping inspections to be conducted for a complete calendar year are determined in the beginning of each year, and covers all the facilities that are under PTH's purview. Items found during the self-inspection process are discussed during the monthly safety council meetings and are tracked to completion.

The DOE-VPP onsite team reviewed several inspection reports and found that safety inspections are conducted regularly as scheduled by the members of the safety council. Likewise, the team found that other safety patrol members conduct weekly inspection of firearms and records that are kept at the Patrol Training Center.

The team noted an area where PTH can enhance their self-inspection process. The team noted that some members of the inspection teams performing monthly inspections have not received specialized hazard recognition training. The team recommends that PTH

could enhance the training it provides on formal hazard recognition to the members of the S&H inspection teams with focus on specific hazards at PTH.

D. Routine Hazard Analyses

Job hazard analysis at PTH is a two-step process. Prior to every exercise, a preliminary job hazard analysis checklist consisting of a number of potential hazards, which an employee may be exposed to, is used to aid in identifying hazards in that area, such as tripping, radiation, falling objects, etc. After the preliminary hazard analyses and walkthrough of the area are conducted, the hazards are analyzed further to verify if proper protections are in place for employees participating in the exercises. This type of extensive analysis is conducted for every exercise. At PTH, extensive job hazard analyses is conducted in identifying hazards and proper engineering controls or procedures. HNF-PRO0079, Job Hazard Analysis Procedure outlines job hazard analyses requirements. For example, during the week of pre-evaluation onsite review, PTH conducted a "Force-on-Force" mock exercise for which a comprehensive job hazard analyses was conducted. These exercises are conducted periodically and every mock exercise undergoes a comprehensive walk-down of the area by the safety professionals and a comprehensive job hazard analyses. Prior to each exercise, all the hazards identified during the walkthrough of the area of the exercise and through the job hazard analyses are discussed with the participants just prior to the exercise. The review team noted that during the pre-briefing, safety was extensively emphasized, and members participating in the exercise were made very aware of the hazards in that area and employees paid very careful attention to the specifics of the hazards. For example, when employees were made aware of a hazard posed by a metal pole that was about waist high located near a rail track and were asked to use caution while they were in that area, one employee suggested it to be painted yellow to warn them of the hazard. Likewise, several other employees participated in discussion of various other hazard situations that were presented to them.

This type of extensive analyses is conducted for every exercise. Interviewed employees indicated that they are involved in the checklist prior to the job conducted. Supervisors seek employees' input prior to completing the job hazard analyses. Interviewed supervisors were very aware of their responsibilities in conducting job hazard analyses and involving employees in conducting the hazard analyses.

The team noted several JSAs posted at or near the workstations in the armorer's shop and the adjacent cleaning trailer. Other JSAs are developed by PTH for each new work package or activity. In May of 2000, PTH began using the Hanford Automated Job Hazard (AJHA) process, which is an interactive software program that guides the user in identifying potential hazards.

E. Employee Reports of Hazards

Employees at PTH are not only encouraged to report any unsafe conditions, but are expected to report and correct the situations, if safe to do so. Every interviewed employee was able to cite specific examples where safety issues were brought to management's attention. Employee issues are resolved in a timely manner.

During an interview with one employee, he stated that he took upon himself the initiative to widen a walkway by removing a cabinet that was blocking it. He also stated that if a hazard that can be fixed immediately – "a quick fix type," he would remedy the situation and notify the supervisor of the action. Employees feel no fear of reprisal for reporting hazards to management. For example, one employee stated that: "if it is safety, it is done immediately – they bend backwards for safety." The onsite review also found that the safety concerns are formally tracked to completion. It was clear to the review team that management has an open door policy, whereby employees can bring any safety items to them for resolution without any fear of reprisal.

F. Accident Investigations

The accident investigation process at PTH involves analysis to determine the root cause as well as causal factors. The review team found the accident investigation to be complete and to include root causes as deemed appropriate by the supervisor and the employee. The team also found that the appropriate corrective actions are taken by PTH management to correct the situations. All accidents involving lost-time work and recordable cases are discussed and reviewed by the safety councils at PTH to determine if appropriate root cause was identified and corrective actions taken.

PTH conducts accident investigations based on the requirements outlined in the procedure, HNF-PRO-077, Reporting and Investigating Accidents. This procedure summarizes requirements for reporting and investigating incidents or events. It also provides the accident/incident investigation guidelines in developing corrective actions to eliminate or minimize recurrence, and not to blame employees. The format of the investigations varies based on the nature of an injury. If an employee gets injured at the work site including an injury that is minor in nature such as a scratch or a cut, they are required to report that injury immediately to their supervisors. If the employee and the supervisor decide that the injury can be treated at the worksite, they self-treat the injury. However, if they decide that it is beyond the first-aid treatment, employees are transported to the nearest healthcare center for medical attention.

Investigation of an incident involving occupational injuries at PTH is initiated by the supervisors by completing an event form (A-6001-714). These forms are electronically available to all employees at the site including supervisors. Completed event forms are sent to the S&H manager for review and for repository and maintenance. The onsite review team reviewed several of these forms and found them to be complete and to include root causes as deemed appropriate by the supervisor and the employee to the nature of the accident.

The DOE-VPP onsite review team also found that the appropriate corrective actions were taken by PTH management to correct the situations. All accidents involving lost-time work and recordable cases are discussed and reviewed by the safety councils at PTH to determine if appropriate root cause was identified and corrective action taken. Corrective actions resulting from the accident investigations are formally tracked to completion through a computerized tracking system, and lessons learned from these accidents are distributed to all employees through their managers and safety council representatives.

G. Trend Analysis

The PTH trends data relative to occupational injuries on a monthly basis. The data includes first-aid case incidents, recordable injuries/illnesses, restricted-work and lost-work day cases. These charts are posted at various locations on bulletin boards throughout the organization. In addition to trending the injury/illness data, the causes of the accidents by type such as struck against object, fall/trip/slip and struck by or noise and pressure, etc., are trended on a periodic basis and distributed to the management and safety council for analyses purposes.

With the minor exception of the two recommendations for improvements addressed relative to baseline hazards assessments and specialized training discussed above, the team concluded that PTH met the criteria applied to this tenet for VPP.

VI. Hazard Prevention and Control

A. Access to Certified Professional Expertise

Due to unique contracting arrangements that currently are in effect throughout the Hanford site, PTH does not maintain Certified Industrial Hygienists, Certified Safety Professionals, Certified Safety Engineers, or Certified Occupational Physicians on their own staff. However, due to management commitment to safety, PTH has hired their own safety director who has a degree in industrial safety and a number of years of experience in safety and security and have plans to hire a second S&H professional. However, PTH has access to all these professionals provided by DynCorp at Hanford.

PTH also has an exercise physiologist on staff that has appropriate degrees and is certified by the American College of Sports Medicine. Because of the emphasis on physical training and exercise, this expertise is critical to the PTH mission. Additional PTH access to certified safety professionals and services is controlled by the managing contractor (FDH).

B. Methods of Hazard Prevention and Control

PTH employs a standard hierarchy of controls approach to the prevention and mitigation of hazards in the work environment consisting of engineering controls, administrative controls, and personal protective equipment (PPE). Examples of the use of this hierarchy of controls are the safety measures employed during PTH "Force on Force" exercises. Engineering Controls demonstrated in these exercises include the special re-engineering of M-16s to prevent chambering of live ammunition. In preparation for an exercise, all personnel and vehicles are scanned to ensure no live rounds of ammunition are inadvertently left available for use. These administrative controls coupled with one-on-one controllers have proven very effective in hazard prevention and control. Personal protective equipment controls included research and use of a newer earmuff technology that provides better protection from noise exposure on the firing range.

In preparation for an exercise, all personnel and vehicles are scanned with a metal detector to ensure no live rounds are in pockets, etc. The controller assigned to the individual player then goes through all the check out process with the player, counting blank ammunition, and not only does the player sign off as ready and clean of live ammo, but the controller also signs the document as verification. Administrative controls in other areas include a focus on minimizing or substituting safer materials for hazardous materials, such as the substitution of a newer system to collect lead when cleaning guns that consist of Zep® (safer chemical), and a specially designed clay filter system (to entrap the lead). The clay filter system was heavily researched to find an effective product that protected the employee and the environment.

PPE required on all firing ranges includes newer ear muffs that provide better protection from noise exposure. An industrial hygienist always monitors the firing range qualifications exams to ensure the appropriate level of protection is being worn.

C. Positive Reinforcement

Employees interviewed provided excellent examples of positive reinforcement received from supervisors or higher levels of management for safe work practices. Safety committee employees are very involved in the positive reinforcement program and consistently provide personal reinforcement and motivation for safety due to their exemplary individual commitment to safety.

Safety committee employees are very involved in the positive reinforcement program and consistently provide personal reinforcement and motivation for safety due to their exemplary individual commitment to safety. The program centers on monthly gift certificate awards to formally recognize individuals who go "above and beyond" their normal daily responsibilities to promote safety. The program encourages employees to intervene directly with coworkers to avoid unsafe acts and to correct potential safety hazards, both at work and away. Nominations for the safety awards are made by the employee's peers. An employee is selected for recognition at each PTH safety council meeting. In addition, especially noteworthy safety acts are selected from the nominations for special recognition and gifts.

D. Disciplinary System

The PHMC procedures "Administering Progressive Discipline" is used for bargaining unit employees from HAMTC and HGU, leased from FDH. Employees and supervisors interviewed indicated that they knew and understood the disciplinary system. The Human Resource Manager demonstrated an excellence in comprehending the culture related to VPP safety programs, by her insistence that the discipline system be implemented consistently.

E. Preventive/Predictive Maintenance

The PTH preventive maintenance program is essentially keyed to the periodic inspection, servicing, refurbishing, and testing of individual security equipment items or systems. Preventive maintenance personnel are electricians, instrumentation technicians, and locksmiths that are leased from FDH. During interviews, this group of personnel exhibited exceptional teamwork and a culture committed to "looking out for the other guy" when it comes to safety. Due to the fact that their work is conducted under a variety of companies, interfaces, and procedures, they face unusual challenges regarding sufficient administrative controls for safety. Their teamed approach has been key to their current success in the prevention of injuries. Another strength of the preventative maintenance (PM) program was that the performance statistics indicated a consistent backlog of less than 10%.

Motor vehicles and heavy equipment are divided into two groups: those owned by the Generals Services Administration (GS) and those owned by the Department of Energy. A service-due card is sent to DynCorp's Fleet Management, who in turn notifies the vehicle custodians that service is due.

F. Emergency Preparedness/Emergency Response

FDH maintains the Hanford Site Emergency Preparedness (EP) program that addresses onsite personnel, public S&H, and the environment in the event of operational, natural phenomena, or other emergency events at PHMC facilities. It establishes the criteria for subtier facility/building emergency plans, as well as a response organization to manage emergency conditions, and it defines the system for reporting emergency conditions and requesting emergency assistance. PTH is responsible for all safeguards and security performance tests drills and exercises. Interviewed employees were aware of what to do in emergencies.

G. Medical Program

The HEHF is the occupational medical services contractor at the Hanford site. The HEHF staff includes certified occupational physicians, certified occupational health nurses, and skilled specialists who provide the following services to PTH employees: pre-employment screening, initial and annual medical exams, fitness-for-duty evaluations, first aid treatment, preventive medicine, special health exams (for employees exposed to special hazards), psychological/behavioral counseling, health education, medical records maintenance, injury/illness return-to-work exams, and injury recovery therapy.

The medical aid facility located at 200 East Area is available for use with either a doctor or a physician's assistant; other locations have a registered nurse on duty. Those first aid stations are open on day shift Monday-Friday. The site maintains and operates a fully staffed fire department with at least one paramedic north and another south of the WYE Barricade for medical services after clinic hours. Offsite medical services are provided by Kadlec Medical Center, located within the city of Richland. This unit serves as the primary care provider during medical emergency responses.

The personnel from HEHF visit PTH work areas to familiarize with work-related activities and the associated occupational medical issues. At PTH, external reviews are also performed by other consultants and RL and HQ surveys. These include all aspects of safeguards and security operations with high focus on firearms safety.

H. Tracking Systems

A Hanford site-wide tracking system was being used until recently to track performance indicators as part of the zero accidents site initiative. This included injuries and illnesses recordables and lost away workdays, accident summaries, safety costs, safety concerns, accidents by cause, and accidents by occupation with statistics provided for each

subcontractor. Based on the VPP review by DOE–RL, as well as subsequent PTH Management Assessments, PTH has developed it's own tracking system, "Safeguards and Security Safety Issues Database." This database is very user-friendly and is being made available on computer network for access to all PTH employees. The present system tracks concerns, corrective actions from various assessments, and the committee and building issues and hazards. The team found several instances of safety items from the past year that were not tracked to completion. As a result, the team recommends (not in the form of a goal) that PTH expand its tracking systems to assure all recommendations from S&H reports are entered into the tracking system and tracked to closure in a timely manner.

The consensus of the site team was that the applicant readily exceeds the expectations of the DOE-VPP in this specific tenet.

VII. SAFETY AND HEALTH TRAINING

The DOE-VPP team noted from employee interviews and document reviews that employees at all levels knew how to identify and protect themselves and others from hazards associated with their jobs. As was noted on several occasions during the interviews, the training provided to PTH employees has made them more conscious of health and safety issues not only in their work environment but also in their everyday lives away from the Hanford Site. Site S&H awareness topics that are also applicable to offsite safety are frequently made in regularly scheduled safety and toolbox meetings.

Management encourages employees to freely participate in program development by way of suggestions and recommendations of how to improve and enhance their training. Top management clearly supports the S&H training programs as evidenced by employee interviews, funding levels, documentation reviews, accreditations and nationally recognized awards from various security-related competitions.

PTH instructors train personnel as Security Officers and Security Police Officers, II & III and other support-related functions. In addition, training programs are in place to develop instructor skills and enhance subject matter expertise in their areas of responsibility.

PTH training is conducted in accordance with the responsibilities and requirements outlined in the Safety and Health Training section, HNF-PRO-059, of the Project Hanford Standard Operations and Procedures manual. The Environment Safety and Health Training program provides the mechanism for PTH to meet the employee training requirements as required by DOE orders, state and Federal regulations, and PH directives.

The Standard Operating Procedure, HNF-PRO-168, "Employee Training," is used for guidance and the Hanford Site Training & Training Matrix System (TMX) is used to maintain training records.

PTH line managers are responsible for identifying the health and safety training required for employees within their organizations. Each manager has access to training records information on his/her employees through the sitewide personal computer information system's reports.

PTH training records are kept for all courses for which a Course Development Sheet has been prepared. A review of sample TMX records confirmed the reports include a tracking number, manager's name, employee organization, employee position, and training history including refresher training (HGET) and retraining courses, and the retraining date for each employee.

Formal training begins with the Hanford Site General Employee Training (HGET) Orientation. HGET is required for all new hires, and continues with applicable portions of training requirements using electronic delivery systems. In addition to a variety of general S&H subjects automatically presented by HGET, each qualifying employee receives an expanded facility orientation for specific plants/areas. PTH relies heavily on HGET for training and refresher training of guards and managers. HGET is a computer-based training. Personnel taking the HGET examination can guess the answer without reading the course content. If the guess is right, they would be given HGET certification that is valid for 1 year. The DOE-VPP team recommends that PTH enhance the training program by going over the incorrect answers.

Facility specific training is provided based on the location of a worker's job assignment. Interviews confirmed when an employee is transferred to a new site location, a brief training period is required before being allowed to assume work duties at the new location. The Training Matrix, which lists the job functions and the training required, is used as the basis for job specific training.

Employees are taught to recognize hazards of their jobs through several means. Technical specialty groups receive professional skills training, which enhances the knowledge of workers in specific disciplines. Operations training provides special qualification training for members of the operating staff. Operations training includes: fire systems, emergency systems, hazard communications, hazardous waste operations, and operational safety requirements.

PTH managers, supervisors, and team leaders receive the same health and safety training as their employees. However, some of the course material is modified and expanded to incorporate supervision/management techniques and other responsibilities. Line managers are required to complete the Manager's Safety Training course. This course is designed to teach various levels of management roles and responsibilities as S&H program leaders; how to set meaningful goals; how to achieve employee involvement, as well as the importance of daily commitment.

Interviews with personnel who conduct S&H inspections and self-assessments indicated they are not always provided specialized, in-depth hazard recognition training. Addition of more specialized training will enhance the overall training program and the site's self-assessment process. This suggestion has been incorporated with a prior recommendation under Worksite Analyses. The team reached a consensus that the applicant readily exceeds the expectation of DOE-VPP for this tenet.

VIII. General Assessment

A. Safety and Health Condition

The onsite review team conducted a number of walkarounds, both as a group and individually, and conducted over one hundred interviews of personnel. The consensus of the team was that the site was well maintained and no major issues of S&H were observed.

B. Safety and Health Programs

The DOE-VPP team found the PTH S&H program to be highly effective. While minor opportunities for improvement were identified, the overall program is comprehensive and well communicated.

C. Team Conclusions

The team was able to reach a consensus opinion that the applicant exceeded the acceptance criteria for DOE-VPP. The team additionally has identified two specific recommendations as further enhancements to the PTH S&H program. These recommendations, if accepted, were considered to be short-term weaknesses that could be accommodated by the applicant in a relatively short time. The specific recommendations are:

1. Protection Technology Hanford should develop and implement a management system that ensures full documentation of its annual safety and health program evaluations. The annual evaluation should address each element of the DOE-VPP.

2. Protection Technology Hanford should compile and maintain full documentation for its baseline hazards assessments and survey programs. Additionally, Protection Technology Hanford should enhance its existing hazards recognition training for assessment personnel.

Appendix: DOE-VPP Onsite Review Team for Protection Technology Hanford

Name	Organization
Kanth, Sanjeeva	Team Leader, DOE/EH-51
Singal, Steve	Assistant Team Leader, DOE/EH-51
Atkins, Noble	DOE/RL
Eizaguire, Josu	DOE/RL
Cavannaugh, John	DOE/RL
Hoeschen, Dan	OSHA/Region X
Cook, Bill	Wackenhut Security Inc., Savannah River Site
Griffith, Jack	Fluor Hanford
Hennemen, Pete	DynCorp/PHMC
Oak, Ron	DynCorp/PHM